



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicants: Akram M. Hosain et al. § Art Unit: 2682
§
§
Serial No.: 09/412,099 §
§ Examiner: Yuwen Pan
Filed: October 4, 1999 §
§
Title: Accounting Method and § Docket NRT.0013US
Apparatus for § No.: (RR2646)
Communications Networks §

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Dear Sir:

Appellants submit the following reply to the Examiner's Answer dated July 1, 2004.

A. GROUPING OF CLAIMS

In the Supplemental Appeal Brief filed April 14, 2004, Appellant identified the following grouping of claims, and statement regarding which claims stand and fall together:

Group 1: Claims 1-3, 5-7, 21, 22, 24-28, and 31

Group 2: Claims 16, 17, 34, 37, and 38

Group 3: Claims 29 and 30

Group 4: Claims 8 and 35

Date of Deposit:

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Within each group, the claims stand and fall together. The remaining claims are not part of any group.

In the Examiner's Answer, the Examiner stated that "[t]he rejection of claims 1-3, 5-8, 16-22, and 24-39 stand or fall together because appellant's brief does not include a statement that this group of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7)." Examiner's Answer at 2.

Appellants disagree with this assessment by the Examiner. Four groups of claims were specifically identified, with a statement made that, within each group, the claims stand and fall together. Appellants also stated that the "remaining claims are not part of any group."

The Examiner has grouped *all* pending claims together despite the fact that Appellants have identified four separate groups and claims that are not part of any group. All 37 C.F.R. § 1.192(c)(7) requires is a statement by Appellants of whether the claims of *each* group stand and fall together. Appellants have clearly satisfied this requirement. The Examiner's attempt at grouping all pending claims together and stating that all such claims stand and fall together is improper.

Appellants have also submitted separate arguments with respect to the claims of the separate groups, and for claims indicated as not being part of any group.

B. ARGUMENTS

In response to Appellants' arguments with respect to claim 1, the Examiner stated that "[a] simpler way of definition [of accounting unit] is just accounting information in which it is in a form of '01' binary data within the data stream exchanging among the complex data network." Examiner's Answer at 9. It is unclear where the Examiner obtained this definition of

“accounting unit” and what the basis is to define “accounting unit” as being “in a form of ‘01’ binary data within the data stream exchanging among the complex data network.” There is no requirement in claim 1 that the accounting unit is in the form of “01” binary data. However, claim 1 does specifically recite an act of *collecting* accounting information based on the type of service and usage of the service, wherein collecting the accounting information includes *compiling* the accounting information into an accounting unit, and where the accounting unit has a first entry to indicate a quality of service provided over the packet-based network, and a second entry to indicate mobility management. The term “accounting unit” is well defined by the claim itself. According to claim 1, an accounting unit contains compiled accounting information, and further, the accounting unit has at least two entries, a first one to indicate a quality of service provided over a packet-based network, and a second entry to indicate mobility management. The attempt at defining accounting unit as being “01” binary data, as performed by the Examiner, has no basis in the ordinary meaning of the term “accounting unit” or any assigned meaning provided by the claim or the specification of the present application.

The Examiner also misconstrued Appellants’ arguments as follows: “It seems that the appellant tries to emphasize the sequential order of QoS and mobility management.” Examiner’s Answer at 10. Appellants made no such argument with respect to claim 1. The sequential order of the first and second entries of the accounting unit is *not* important, and there is absolutely no requirement in claim 1 of any sequential ordering of the two entries. However, what claim 1 does recite is the compiling of accounting information into an accounting unit, where the accounting unit has first and second entries relating to quality of service and mobility management, respectively.

As explained in the Appeal Brief, Rai provides absolutely no teaching of an accounting unit that has the two entries recited in claim 1, a first entry to indicate quality of service and another entry to indicate mobility management. Appellants do not dispute the fact that Rai mentions the word “mobility” and “quality of service.” However, what Rai lacks is the teaching of an accounting unit that contains a first entry to indicate a quality of service provided over a packet-based network, and a second entry to indicate mobility management.

The Examiner further quoted the following passages of Rai: (1) col. 18, line 29-col. 19, line 7; and (2) col. 19, lines 51-67. The first quoted passage refers to a mobile end system registering with a foreign network. The quoted passage also refers to the home IWF and PPP server starting the home accounting server and sending a start IWF response to the home registration server.

The passage at column 19, lines 51-67, refers to configuring a network service for an end system based on a subscriber’s service profile, with the service profile containing information to enable the software to customize wireless data service on behalf of the subscriber, information to authenticate the end system, information to allow the end system to roam, information to set up connections to the end system’s Internet service provider, and quality of service information. However, no mention whatsoever is made that this service profile constitutes accounting information that is compiled into an accounting unit such that the accounting unit contains first and second entries indicating quality of service and mobility management, respectively, as recited in claim 1.

Rai specifically discusses accounting attributes reported in accounting packets by accounting clients to accounting servers in column 29. However, it is significant that Rai makes

no mention whatsoever of QoS in this passage. The seven accounting attributes listed in column 29 do not relate to QoS. Nor does this passage describe any accounting attributes that relate to mobility management.

Rather than focus on a specific teaching of accounting packets by Rai, the Examiner has attempted to stretch the remaining portions of Rai beyond reason in the attempt to find an accounting unit with the recited entries. The remaining portions of Rai clearly provide no such teaching.

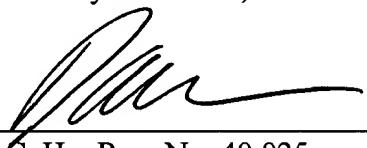
With respect to dependent claim 8, which depends indirectly from claim 1, the Examiner stated that Appellants' arguments that column 29 of Rai does not teach an entry of an accounting unit indicates a type of service that can be one of real-time communications and at least another type of service is moot because the Office Action had relied upon column 16, lines 4-20, instead of column 29. The column 16, lines 4-20, passage refers to the advantages and disadvantages of using an IWF (inter-working function). The cited passage also refers to a serving IWF sending accounting information in near real time back to an accounting server in a home network. Although this passage mentions that accounting information can be sent in near real time back to an accounting server in a home network, there is no teaching whatsoever of collecting an additional entry assigned a value to indicate a type of service, which includes one of real-time communications and at least another type of service. Claim 8 refers to the content of the accounting information, whereas Rai describes the real time transmission of accounting information. Rai therefore clearly does not disclose the subject matter of claim 8, contrary to the assertion by the Examiner on page 12 of the Examiner's Answer.

C. CONCLUSION

For the foregoing reasons, as well as reasons set forth in the Supplemental Appeal Brief, reversal of the final rejections is respectfully requested.

Respectfully submitted,

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APPENDIX

Claims on appeal:

- 1 1. A method of accounting for services provided over a packet-based network, comprising:
 - 2 determining a type of service used over the network;
 - 3 monitoring usage of the service; and
 - 4 collecting accounting information based on the type of service and usage of the service,
 - 5 wherein collecting the accounting information includes compiling the accounting information
 - 6 into an accounting unit,
 - 7 wherein the accounting unit has a first entry to indicate a quality of service provided over
 - 8 the packet-based network, and a second entry to indicate mobility management.
- 1 2. The method of claim 1, wherein the determining, monitoring, and collecting are
2 performed in a first entity, the method further comprising transmitting, from the first entity, the
3 accounting unit to at least another entity.
- 1 3. The method of claim 2, further comprising assigning an identifier with the collected
2 accounting information that is common between the first entity and the at least one other entity.
- 1 5. The method of claim 1, further comprising using an accounting unit having a common
2 format for convenient exchange between entities.
- 1 6. The method of claim 1, further comprising using an accounting unit including a traffic
2 matrix segment.
- 1 7. The method of claim 1, wherein determining the type of service includes determining one
2 of a plurality of service types, wherein collecting the accounting information comprises
3 collecting an additional entry assigned a value to indicate a type of service.

1 8. The method of claim 7, wherein determining one of the plurality of service types include
2 determining one of real-time communications and at least another type of service.

1 16. A method of accounting for services provided over a packet-based network, comprising:
2 communicating a unit of accounting information carrying information regarding usage of
3 the packet-based network by a terminal, the unit of accounting information having a
4 predetermined format capable of being exchanged between a plurality of entities; and
5 assigning values to entries in the unit of accounting information based on usage, the unit
6 including a first entry indicating a quality of service provided over the packet-based network and
7 a second entry containing a network access identifier of the terminal to uniquely identify the
8 terminal.

1 17. The method of claim 16, wherein assigning values to entries further includes assigning a
2 value to an additional entry indicating a type of service.

1 18. The method of claim 17, wherein assigning values to entries further includes assigning
2 values to additional entries including entries indicating usage of a radio interface, indicating
3 usage of a visited network, indicating usage of mobility management, and indicating an amount
4 of data transferred.

1 19. The method of claim 18, wherein assigning values to entries further includes assigning a
2 value to an additional entry indicating erroneous termination of communications.

1 20. A method of accounting for services provided over a packet-based network, comprising:
2 communicating a unit of accounting information carrying information regarding usage of
3 the packet-based network by a terminal, the unit of accounting information having a
4 predetermined format capable of being exchanged between a plurality of entities; and
5 assigning values to entries in the unit of accounting information based on usage, the unit
6 including a first entry indicating a quality of service provided over the packet-based network and

7 a second entry containing a network access identifier of the terminal to uniquely identify the
8 terminal,

9 wherein assigning values to entries further includes assigning a value to an additional
10 entry indicating a type of service,

11 wherein assigning values to entries further includes assigning values to additional entries
12 including entries indicating usage of a radio interface, indicating usage of a visited network,
13 indicating usage of mobility management, and indicating an amount of data transferred,

14 wherein assigning values to entries further includes assigning a value to an additional
15 entry indicating erroneous termination of communications,

16 wherein assigning values to entries further includes assigning a value to an additional
17 entry indicating an amount of discarded data.

1 21. A system capable of being coupled to a packet-based network, comprising:
2 a controller to collect usage information based on a service used by a node on the packet-
3 based network; and

4 a storage device containing an accounting unit in which the usage information is
5 collected, the accounting unit including a plurality of entries to identify usage elements from
6 which accounting may be derived, the entries comprising a first entry to indicate a quality of
7 service used by the node and a second entry to indicate usage of mobility management.

1 22. The system of claim 21, wherein the entries of the accounting unit include an entry
2 identifying a type of service used.

1 24. The system of claim 21, wherein the entries of the accounting unit further comprise
2 entries indicating elements used by a mobile node, including mobility management, usage of a
3 radio interface, and usage of a visited network.

1 25. The system of claim 21, wherein the accounting unit includes a traffic matrix segment.

1 26. The system of claim 21, wherein the accounting unit is according to a predetermined
2 format, the controller to further communicate the accounting unit to another entity.

1 27. The system of claim 21, further comprising:
2 an accounting processor adapted to receive accounting units from at least one other
3 entity.

1 28. The system of claim 27, wherein the accounting processor is adapted to generate billing
2 to a subscriber based on one or more of the accounting units.

1 29. An article including one or more machine-readable storage media containing instructions
2 for accounting for services used on a packet-based data network, the instructions when executed
3 causing a system to:
4 determine usage elements associated with each service, the usage elements including a
5 service type, amount of data communicated, and mobility management; and
6 collect accounting units each including entries identifying the usage elements.

1 30. The article of claim 29, wherein the one or more storage media contain instructions that
2 when executed cause the system to further communicate the accounting units to another entity.

1 31. A computer data signal embodied in a carrier wave comprising one or more code
2 segments containing instructions for accounting for services used on a packet-based data
3 network, the instructions when executed causing a system to:
4 receive accounting units from at least another entity, each accounting unit containing a
5 first entry identifying a quality of service, a second entry identifying a terminal the accounting
6 unit is associated with, and a third entry indicating usage of mobility management;
7 determine, from each accounting unit, usage of a service on the packet-based network;
8 and
9 charge at least a subscriber for the usage of the service.

- 1 32. A storage device for storing data for access by one or more software routines being
- 2 executed on a system, comprising:
 - 3 a data structure stored in the storage device and including a plurality of entries, the entries
 - 4 including a first field indicating a quality of service provided over a packet-based network, a
 - 5 second field indicating if the service is chargeable, and a third field including an identifier
 - 6 identifying a node using the service.
- 1 33. The storage device of claim 32, wherein the data structure further includes a field
- 2 indicating if mobility management is provided for the node, a field indicating usage of a radio
- 3 interface by the node, and a field indicating usage of a visited network by the node.
- 1 34. The method of claim 17, wherein assigning a value to the additional entry comprises
- 2 assigning one of plural values corresponding to plural types of service.
- 1 35. The method of claim 34, wherein the plural types of service comprise real-time
- 2 communications and at least another type of service.
- 1 36. The method of claim 16, wherein communicating the unit of accounting information
- 2 comprises communicating a traffic matrix segment having a header and plural rows, each row
- 3 containing accounting information associated with a session having a given time duration.
- 1 37. The method of claim 16, wherein assigning values to entries further includes assigning
- 2 values to additional entries containing source and destination network addresses.
- 1 38. The method of claim 16, further comprising monitoring usage of services on the packet-
- 2 based network with an accounting meter, wherein assigning values to the entries is performed by
- 3 the accounting meter.

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- 1 39. The article of claim 29, wherein the usage elements further comprise quality of service,
- 2 usage of air interface, and a network access identifier.